

Appl. No. 10/799,248
Atty. Docket No. 9194
Amdt. dated February 21, 2006
Reply to Office Action of November 18, 2005
Customer No. 27752

REMARKS

Claim Status

Claims 1-6 are pending in the present application. No additional claims fee is believed to be due.

Rejection Under 35 USC §103(a) Over Pozniak (US Pat. No. 4,136,615) in view of Yang et al (US 20040077178)

Claims 1, 2 and 5 have been rejected under 35 USC §103(a) as being unpatentable over Pozniak (US Pat. No. 4,136,615) in view of Yang et al (US 20040077178). This rejection is traversed because the cited references do not establish a *prima facie* case of obviousness because they do not teach or suggest all of the claim limitations of Claims 1, 2 and 5, and, in any event, there is no motivation to modify Pozniak by the teachings of Yang.

Applicants agree that Pozniak does not disclose a step where photoresist polymer is further applied (e.g., in a second step) to the upper surface and sidewall of the at least one protrusion.

However, not only does Pozniak not teach such a step as claimed in the present invention, Pozniak does not even suggest such a step. In fact, for much of the material of Pozniak such a step is impossible. Pozniak discloses at column 5, lines 13-17:

However, the resulting pattern plate of this invention retains its structural integrity because of the self-supporting dimensionally stable character of the all-plastic base structure provided by layers 21 and 22.

Moreover, at column 5, lines 44-46, Pozniak teaches:

Surprisingly, during the acid etching step of preparing the pattern plate, the etchant thoroughly removes the metal in the larger areas of maximum depth of etch.

Therefore, what Pozniak teaches is "thorough removal" of metal right down to the "all plastic structure" of the support layers 21 and 22. No further metal can be etched in these areas. It is literally impossible. See FIG. 2B, for example, which shows all the

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metal etched away down to the plastic backing layers. For portions which are not “thoroughly” removed, Pozniak teaches, not a second etching step, but “the need to mechanically rout out and clean up these ... areas ... to remove superfluous metal not cleanly removed by etching.” Thus, Pozniak does not contemplate a second etching step at all.

Accordingly, there can be no suggestion or motivation in Pozniak to repeat the step of metal removal as claimed, because there is no more metal to remove.

Even if Pozniak suggested the benefit of a second metal removal step, including the step of lateral etching as disclosed in Yang still does not yield the present invention. In fact, combining Yang with Pozniak achieves exactly the opposite of the claimed invention: a protrusion having lateral undercuts near the base.

Yang discloses at paragraph [0008] a process for “lateral etching” a substrate by plasma etching—a technology not analogous to that of Pozniak. That is, Yang discloses a method for plasma etching that:

“[L]aterally etches a all at the bottom of the structure until the structure is notched to a predetermined width or released.”

The notching step of Yang produces exactly the opposite structure as achieved by the claimed invention (See, e.g., Yang FIGS. 1C, 1D, 2C, 2D). As stated at page 3, lines 6-12, in the Background of the specification for the present invention (emphasis added):

“Attempts to make surface aberrations having significantly higher amplitudes on metal forming structures such as those described in Ahr ‘045 have been unsuccessful due to the inherent limitations of known photoetching processes. That is, after a resist coating is applied, photoetching, if given sufficient time, tends to etch away material around the surface aberrations indiscriminately ... Eventually, due to the undercutting effect of the photoetching, the base of the surface aberration can be completely etched away.”

Thus, the present invention is directed to doing exactly the opposite of what is taught in Yang. If one were to combine Yang with Pozniak, therefore, one would achieve exactly what the claimed invention avoids, lateral undercutting.

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Accordingly, Applicants submit that there is no teaching or suggestion of the claim limitations of Claims 1, 2, and 5 from Pozniak in view of Yang. Applicants respectfully request the withdrawal of the rejection of Claim 1, 2, and 5.

Rejection Under 35 USC §103(a) Over Pozniak (US Pat. No. 4,136,615) in view of Yang et al (US 20040077178) and further in view of Luthje et al. (US 20010021419)

Claim 3 has been rejected under 35 USC §103(a) as being unpatentable over Pozniak (US Pat. No. 4,136,615) in view of Yang et al (US 20040077178) and further in view of Luthje et al. (US 20010021419). This rejection is traversed because the cited references do not establish a *prima facie* case of obviousness because they do not teach or suggest all of the claim limitations of Claim 3, and, in any event, there is no motivation to modify Pozniak by the teachings of Yang and Luthje.

As discussed above with respect to Claim 1, from which Claim 3 depends, the combination of Pozniak and Yang fails to render the claimed invention obvious because the combination fails to teach, suggest, or otherwise disclose a second etching step in the manner claimed so as to avoid lateral notching of the protrusions.

The addition of Luthje does not remedy the deficiency of Pozniak and Yang. That is, Luthje does not teach, suggest, or otherwise disclose a second etching step in the manner claimed.

Because all the claim limitations are not taught or suggested in the cited art, there can be no motivation to combine the art to achieve the claimed invention. The Office Action provided no motivation to combine the lateral notching step of Yang to render the un-notched structure achieved by the claimed invention. The Office Action provided no motivation to further combine Luthje to achieve this benefit of the present invention.

Accordingly, Applicants submit that the cited references, singly or in combination, fail to disclose all the claim limitations of Claim 1 from which Claim 3 depends, and, further, there is no motivation to modify the references to achieve the claimed invention. Therefore, the rejection of Claim 3 should be withdrawn.

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Rejection Under 35 USC §103(a) Over Pozniak (US Pat. No. 4,136,615) in view of Yang et al (US 20040077178) and Luthje et al. (US 20010021419) and further in view of Ichinose (US Pat. No. 5,688,366)

Claim 4 has been rejected under 35 USC §103(a) as being unpatentable over Pozniak (US Pat. No. 4,136,615) in view of Yang et al (US 20040077178) and Luthje et al. (US 20010021419) and further in view of Ichinose (US Pat. No. 5,688,366). This rejection is traversed because the cited references do not establish a *prima facie* case of obviousness because they do not teach or suggest all of the claim limitations of Claim 4, and, in any event, there is no motivation to modify Pozniak by the teachings of Yang and Luthje and still further with a fourth reference, Ichinose.

As discussed above with respect to Claims 1 and 3, from which Claim 4 depends, the combination of Pozniak and Yang (Claim 1) and the combination of Pozniak, Yang, and Luthje (Claim 3) fails to render the claimed inventions of either Claim 1 or Claim 3 obvious because the combination fails to teach, suggest, or otherwise disclose a second etching step in the manner claimed so as to avoid lateral notching of the protrusions.

The addition of Ichinose does not remedy the deficiency of Pozniak and Yang and Luthje. That is, Ichinose does not teach, suggest, or otherwise disclose a second etching step in the manner claimed.

Because all the claim limitations are not taught or suggested in the cited art, there can be no motivation to combine the art to achieve the claimed invention. The Office Action provided no motivation to combine the lateral notching step of Yang to render the un-notched structure achieved by the claimed invention. The Office Action provided no motivation to further combine Luthje to achieve this benefit of the present invention.

Accordingly, Applicants submit that the cited references, singly or in combination, fail to disclose all the claim limitations of Claims 1 or 3 from which Claim 4 depends, and, further, there is no motivation to modify the references to achieve the claimed invention. Therefore, the rejection of Claim 4 should be withdrawn.

Rejection Under 35 USC §103(a) Over Pozniak (US Pat. No. 4,136,615) in view of Yang et al (US 20040077178) and further in view of Luthje et al. (US 20010021419)

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Claim 6 has been rejected under 35 USC §103(a) as being unpatentable over Pozniak (US Pat. No. 4,136,615) in view of Yang et al (US 20040077178) and further in view of Saksa et al. (US 20030185971). This rejection is traversed because the cited references do not establish a *prima facie* case of obviousness because they do not teach or suggest all of the claim limitations of Claim 6, and, in any event, there is no motivation to modify Pozniak by the teachings of Yang and Saksa.

As discussed above with respect to Claim 1, from which Claim 6 depends, the combination of Pozniak and Yang fails to render the claimed invention obvious because the combination fails to teach, suggest, or otherwise disclose a second etching step in the manner claimed so as to avoid lateral notching of the protrusions.

The addition of Saksa does not remedy the deficiency of Pozniak and Yang. That is, Saksa does not teach, suggest, or otherwise disclose a second etching step in the manner claimed.

Because all the claim limitations are not taught or suggested in the cited art, there can be no motivation to combine the art to achieve the claimed invention. The Office Action provided no motivation to combine the lateral notching step of Yang to render the un-notched structure achieved by the claimed invention. The Office Action provided no motivation to further combine Saksa to achieve this benefit of the present invention.

Accordingly, Applicants submit that the cited references, singly or in combination, fail to disclose all the claim limitations of Claim 1 from which Claim 6 depends, and, further, there is no motivation to modify the references to achieve the claimed invention. Therefore, the rejection of Claim 6 should be withdrawn.

Conclusion

In light of the above remarks, it is requested that the Examiner reconsider and withdraw the rejections. Early and favorable action in the case is respectfully requested.

This response represents an earnest effort to place the application in proper form and to distinguish the invention as now claimed from the applied references. In view of the foregoing, reconsideration of this application, entry of the amendments presented herein, and allowance of Claims 1-6 is respectfully requested.

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Respectfully submitted,

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